DOCUMENT RESUME

ED 406 785 EC 305 478

AUTHOR Strong, Michael; Prinz, Philip
TITLE The Relationship between ASL Skill and English Literacy.
PUB DATE Mar 97
NOTE 8p.; In: Windows - 97 on the New Standards. Monograph of Collected Papers from the Annual Conference of the Association of College Educators - Deaf and Hard of Hearing (23rd, Santa Fe, NM, March 7-10, 1997); see EC 305 461.
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *American Sign Language; *Deafness; Elementary Secondary Education; *English; *Language Acquisition; *Literacy; Parent Influence; Parents With Disabilities; Residential Schools; *Skill Development

ABSTRACT

This paper describes the first three stages of a 4-year study whose purpose is to examine the relationship between American Sign Language (ASL) and English literacy among 160 residential school children (ages 8-15) who are deaf. In the first stage, test instruments were developed, data collection procedures refined, sampling procedures planned, and a small subsample of subjects were tested. In the second stage, the relationship between ASL competence and English literacy was examined. A component of this part of the study was whether the children with hearing impairments who have deaf parents outperform children with hearing impairments who have hearing parents in ASL skills and English literacy. The third stage examined whether changes in ASL ability are related to changes in English literacy skills over a 12-month period. Results found that: (1) high ASL groups significantly outscored medium and low groups in English literacy; (2) students with mothers who were deaf scored significantly higher than students with hearing mothers in tests of English literacy and ASL; and (3) subjects showed a small but statistically insignificant correlation between ASL improvement and English literacy improvement after 1 year. (CR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED 406 785

The Relationship Between ASL Skill and English Literacy

by

Michael Strong
University of California
San Francisco, CA
Tel.: 415-338-1077
FAX: 408-659-7045
E-mail: mastrong@sprynet.com

Philip Prinz
San Francisco State University
1600 Holloway Avenue
San Francisco, CA 94132
Tel.: 415-338-7655
FAX: 415-338-0566
E-mail: pm@sfsu.edu

18

EC 305178

BEST COPY AVAILABLE

This paper describes the first three stages of a four-year study whose purpose is to examine the relationship between ASL skills and English literacy among residential school deaf children aged 8 to 15 years. During the first stage we developed test instruments, refined data collection procedures, planned sampling procedures, and tested a small sub-sample of subjects (Prinz & Strong, 1995). The findings from this pilot study confirmed that the direction of our planned inquiry was legitimate, and that the measurement instruments were both reliable and valid. The purpose of the second stage was to address the following research questions:

1. *What is the relationship between ASL competence and English literacy among Deaf students, aged 8-15 years?*
2. *Do deaf children of deaf parents outperform deaf children of hearing parents in ASL skills and English literacy skills?*

Stage three of the project asks the question:

3. *Are changes in ASL ability related to changes in English literacy skills over a twelve-month period?*

Subjects

One hundred and sixty deaf students were recruited from the pool of students at the school site with no other handicapping conditions who fell within the age parameters defined by the study. The subjects were divided into two age groups, Group 1 ages 8-11, Group 2 ages 12 and over. The distribution of subjects by age and maternal hearing status is found in Table 1.

Table 1: Distribution of Subjects

	8-11	12-15	Total
Deaf Mother	14	26	40
Hearing Mother	42	73	115
Total	57	103	155

Measurements

There are two sets of language-related tests, one for ASL and one for English Literacy. ASL skills were assessed using the Test of American Sign Language (Prinz & Strong, 1994). A draft of the test was sent to five nationally recognized deaf linguists. The final version incorporated their feedback. English literacy was assessed using selected and revised subtests from the *Woodcock-Johnson Psychoeducational Test Battery (WJ-R)*, and the *Test of Written Language (TOWL)*.

Non-verbal IQ was measured using the *Matrix Analogies Test*. In addition, parents or guardians completed a questionnaire regarding language use at home, and other background information was collected from school records.

Procedures

Students were taken to a testing room during the school day for two sessions of one hour each during Years 2 and 3 of the study. The ASL tests were conducted during one hour and the English literacy tests and the MAT during the other. Testing order was randomized. Instructions were given on videotape in ASL. The ASL tests were conducted by deaf researchers fluent in ASL, the English tests by hearing

researchers who were also highly proficient in ASL. No hearing persons were present during the ASL testing. All signed responses were videotaped.

The ASL tests were scored by deaf researchers and the English test by signing hearing researchers. Inter-rater reliability was better than 96% in all cases.

Analysis and Results

In order to address the first research question regarding the relationship between ASL skills and English literacy, sub-test scores were standardized, subjects were divided into three ASL levels (high, medium, and low), and Analyses of Covariance were run to test the hypotheses that the higher ASL levels outperformed the lower levels in English literacy, while controlling for age and IQ. Tests were run separately for the two age groups and according to maternal hearing status.

ANCOVA results are shown in Table 2. As can be seen, the tests were all significant except for the two subgroups involving students with deaf mothers. In all cases, the high ASL groups significantly outscored the medium and low groups in English literacy (Table 3). Medium ASL groups outperformed the low groups, but not among the younger students.

Table 2: Summary ANCOVA Results on ASL Level and English Literacy

Group	F-ratio	p value
All	21.6	.000
8 - 11	6.7	.003
12 - 15	17.2	.000
DM		NS
HM	14.5	.000
8 -11, DM		NS
8 - 11, HM	7.5	.002
12 - 15, HM	9.8	.000

DM = Deaf Mother; HM = Hearing Mother; NS = Not Significant

In order to test the second research question, whether DP children outperform HP children in ASL and English literacy, a series of three more ANCOVAs were run, for the whole sample and the two age groups. Again, age and IQ were controlled. Both hypotheses were confirmed: Students with deaf mothers scored significantly higher than students with hearing mothers in tests of English literacy and ASL.

Given these findings, we were interested in asking whether DP children outperform HP children as a result of ASL skill. This we could test by holding ASL level constant and comparing DP and HP students within ASL level. The results showed that at the medium and high levels there was no difference between DP and HP students, indicating that even a medium level of ASL ability appears to negate any

advantage from being born into a deaf family when it comes to acquiring English literacy.

As to the third question, whether a change in ASL level after one year is related to a change in English literacy, we compared gain scores in ASL with gain scores in English literacy for the group as a whole and for the various subgroups. Taken together, subjects showed a small but statistically insignificant correlation between ASL improvement and English literacy improvement. A testing after two years will reveal whether change in ASL ability over a longer period of time is accompanied by an equivalent change in English literacy skill.

Interpretation and Discussion

From the analysis and results presented in the previous section, a clear, consistent, and statistically significant relationship between ASL skill and English literacy is evident, and that, when controlled for age and PIQ, the subjects perform at a higher level of English literacy if their ASL skills are well developed than if those skills are lacking. The post-hoc analyses reveal that English performance improves even with a moderate level ASL skill. Furthermore, when ASL level is held constant, DP children outperform HP children only at the lowest level.

The generally very strong relationship between ASL skill and English literacy may be interpreted in three ways. One is that ASL skill allows for better acquisition of English. A second is that English literacy ability promotes increased ASL skill. A third is that some other factor is intervening to influence both.

Given a setting where ASL is the language of social communication and our control of age, IQ, and school, and the large sample taken from among many classrooms, we feel the most plausible explanation for the relationship is that ASL skill influences English literacy acquisition.

Furthermore, our data suggest that the advantage of being from a deaf family may result largely from fluency in ASL, for, when ASL ability is held constant, DP children's superiority in English almost disappears. Thus the long-standing question of why DP children tend to outperform HP children academically may be resolved.

These findings do not suggest that ASL knowledge is the only path to successful acquisition of English literacy for deaf children, and, indeed, they may not generalize beyond an environment such as the school for the deaf studied here, where ASL is in common use.